

**UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA**

Little Giant Ladder Systems, LLC, a Utah
Company,

No. 20-cv-2497 (KMM/ECW)

Plaintiff,

v.

ORDER

Tricam Industries, Inc., a Minnesota
corporation,

Defendant.

Plaintiff Little Giant Ladder Systems, LLC designs and builds multi-position ladders and holds several patents related to ladders and their components. Among them is United States Patent No. 10,767,416 (“the ’416 patent”), which generally relates to a multi-position ladder system with an innovative locking mechanism. In this action, Little Giant alleges that certain multi-position ladders sold by Defendant Tricam Industries, Inc. infringe the ’416 patent. This matter is now before the Court on the parties’ cross-motions for summary judgment and Tricam’s motion to exclude certain expert witness evidence offered by Little Giant. Pl.’s Summ. J. Mot. (Doc. 164); Def.’s Summ. J. Mot. (Doc. 167); Def.’s Mot. to Exclude (Doc. 171). Although the Court has already issued a Claim Construction Order, the plaintiff has asked the Court to engage in further construction of the “cavity” limitation in the ’416 patent. The Court addresses the ongoing battle over construction of that term prior to considering the parties’ infringement positions. Ultimately the Court concludes that Tricam is entitled to

summary judgment because the accused products do not literally infringe the “cavity” limitation and prosecution history estoppel bars Little Giant from relying on the doctrine of equivalents.

BACKGROUND

I. Multi-Position Ladders and Locking Mechanisms

Little Giant and Tricam compete in the market for multi-position ladders. Multi-position ladders generally include two pairs of rails connected by rungs. The pairs of rails are further connected by a pair of adjustable central hinges. Each pair of rails is slidably coupled together, with an inner set of rails nesting inside the outer set of rails. The inner rails can then slide in relationship to the outer rails, extending the overall length or height of the ladder. The inner rails can be fixed in place by locking mechanisms that are mounted on the outer rails. The '416 patent relates to such a ladder system that, among other things, claims a novel system for a locking mechanism. Compl. ¶¶ 7, 13 (Doc. 1). The focus of this case is on the '416 patent's claimed locking mechanism and whether Tricam's ladders infringe Little Giant's patent.

Prior to the innovation claimed in the '416 patent, multi-position ladders used “lock tabs” or “J-locks,” and Little Giant manufactured and sold ladders using lock tabs like those depicted below.



Compl. ¶ 9. The lock tabs used internal springs that keep them pressed inward when engaged, toward the rails, and the locking mechanism included an engagement pin that passes through openings in the inner and outer rails that are aligned to secure the ladder in a particular configuration. However, the lock-tab design presented difficulties for the end user. They tended to pinch the user's fingers, could be difficult to use, and required significant effort, especially from smaller users, given that "actuating such locking members usually requires lateral displacement of the locking members outward, or away from, the side rails of the ladders." '416 patent Col. 1:57–2:38 (Doc. 1-1).

Little Giant developed other locking mechanisms for its multi-position ladders over the years that represent certain improvements over the lock tabs. These include designs commercialized by Little Giant as its “Rock Lock” and “Rapid Lock” mechanisms, pictured below.



Rock Locks



Rapid Locks

Compl. ¶ 10. These designs, “use . . . rotational movement and mechanical engagement to pull out and push in the locking pins and to retain the locking pins in each position until a new pivoting force is applied.” *Id.* ¶ 11. Starting in 2008, Little Giant filed patent applications, including for its locking mechanisms, that led to the issuance of a family of patents that includes the ’416 patent.¹

II. Tricam’s Accused Ladders and Little Giant’s Claims

Tricam manufactures and sells multi-position ladders in competition with Little Giant. Little Giant claims that Tricam’s “MPX” or “Gorilla Ladders” (“Accused

¹ The ’416 Patent is a “[c]ontinuation of application No. 14/886,566, filed on Oct. 19, 2015, now Pat. No. 9,784,033, which is a continuation of application No. 13/480,897, filed on May 25, 2012, now Pat. No. 9,163,455, which is a continuation of application No. 12/399,815, filed on Mar. 6, 2009, now Pat. No. 8,186,481.” ’416 Patent at 1–2.

Ladders”)² use locking mechanisms that infringe the ’416 patent. Compl. ¶ 17. An example of Tricam’s locking mechanism, which Tricam commercialized as “Speed Locks,”³ is depicted below.



Compl. ¶ 20. Tricam’s Speed Locks attach to the outer rails of their Accused Ladders and use a rotating handle that displaces a pin through aligned opening in the inner and outer rails.

The Speed Locks of Tricam’s ladders have a handle that sits atop a ramp-and-boss wedge affixed to the outer rail. When in the locked position, the handle is parallel to the rails, a pin is extended through openings in both sets of rails, and the handle stays in place as two wings sit on either side of the wedge. The boss extends into a central, circular cavity,⁴ where a rivet slot is used to attach the knob to the pin. To remove the pin, unlock the rails, and allow the ladder to be extended or contracted, the handle is

² The Accused Ladders include Tricam’s ladders with the following model numbers: GLA-MPX13; GLMPX-13; GLMPXA-14; GLMPX-14W-2; GLMPX-17; GLA-MPX17; GLMPXA-18; GLMPX-22; GLA-MPX22; GLMPXA-22; GLMPX-22W-2; GLMPX-26; GLA-MPX26; GLMPX-26W-2; GLMPXT-15; and GLMPXT-23.

³ As explained in Tricam’s briefing, it markets some of its locking mechanisms as “Gorilla Grip Locks,” but refers to all such locks as “Speed Locks” for purposes of the summary judgment motions.

⁴ There is no dispute that this central, circular notch constitutes a “cavity” within the meaning of the language of Claim 1 of the ’416 patent.

rotated 90 degrees, and opposing notches on each wing then allow the Speed Lock handle to remain in place while the user moves the ladder into the desired position. Turning the handle 90 degrees back to parallel with the rails disengages the notches from the ramp, allows the pin to extend back through the aligned openings in the rails, and locks the ladder into the new configuration selected by the user. *See* Ver Halen Rebuttal ¶¶ 45–51 (describing design and operation of the Tricam Speed Lock) (Doc. 180-6). A labeled image of the underside of the Speed Lock is depicted below.



Id. ¶¶ 48, 96.

Little Giant alleges that the Accused Ladders infringe every claim limitation of the '416 patent. *See* Omnibus Armstrong Decl. (Doc. 173), Ex. 21 (Pl.'s Infringement Claim Charts); *id.*, Ex. 22 (Pl.'s Suppl. Infringement Claim Charts). In Claim 1, which is the sole independent claim of the '416 patent, Little Giant claims the following:

1. A ladder comprising:
 - a first assembly having a first pair of rails including a first rail and a second rail, and a second pair of rails including a third rail and a fourth rail, the first pair of rails being slidably coupled with the second pair rails; and
 - a first locking mechanism comprising:
 - a first bracket coupled with the first rail,
 - a first component rotatable about a defined axis,

a first engagement pin coupled with the first component, wherein the first locking mechanism is configured so that the first component is rotatable from a first rotational position to a second rotational position; wherein, when the first component is in the first rotational position, a substantial amount of the first bracket is disposed within a cavity defined by the first component and the first engagement pin extends through a pair of aligned openings including a first opening formed in the first rail and a second opening formed in third rail, and wherein, when the first component is in the second rotational position, the first engagement pin is withdrawn from at least one of the first opening and the second opening,

at least one retaining mechanism configured to maintain the first component in the first rotational position until application of a first force is applied to the first component to displace it towards the second rotational position, and

wherein the at least one retaining mechanism is further configured to maintain the first component in the second rotational position until application of a second force is applied to the first component.

'416 patent Col. 10:30–63. The remaining Claims 2 through 5 are dependent claims of Claim 1.

III. Claim Construction Order

The parties' infringement dispute centers around three limitations⁵ in Claim 1—(a) the “first component”; (b) the “cavity”; and (c) the “retaining mechanism.” Following

⁵ Little Giant's motion for summary judgment on the issue of infringement originally argued that the parties disputed whether the Accused Ladders infringed the “bracket” limitation. However, Tricam did not meaningfully respond to Little Giant's arguments in the briefing, and at the summary-judgment hearing, Tricam confirmed that it was not disputing that its Accused Ladders satisfy the “bracket” limitation. *See* Pl.'s Mem. in Supp. of Summ. J. of Infringement (“Pl.'s Infringement Mem.”) at 1 (Doc. 166); Summ. J. Hr'g Tr. 61 (Doc. 207). Tricam also does not dispute that its ladders satisfy the other elements of the '416 patent aside from the “first component,” the “cavity,” and the “retaining mechanism.”

receipt of claim-construction briefing and a lengthy hearing, on June 24, 2022 the Court issued an Order concerning Claim Construction, which included a construction of each of these terms. *See* Claim Construction Order (Doc. 107). Because this Order focuses on the cavity term, a review of the relevant portions of the Claim Construction Order will be helpful.⁶

The cavity limitation appears within a longer phrase in Claim 1 of the '416 patent: “a substantial amount of the first bracket is disposed within a cavity defined by the first component.” *Id.* at 11. Ultimately, considering both the agreed upon constructions offered by the parties and those terms that were disputed, the Court found that the proper construction of this phrase is: “more than a majority of the first bracket is placed inside of a hollowed-out space (not passing all the way through) defined by the first component.” *Id.* at 25–26. The parties agreed that “substantial amount” should be construed to mean “more than a majority,” and the Court found this agreed-upon construction was supported by the intrinsic record. *Id.* at 14–15.

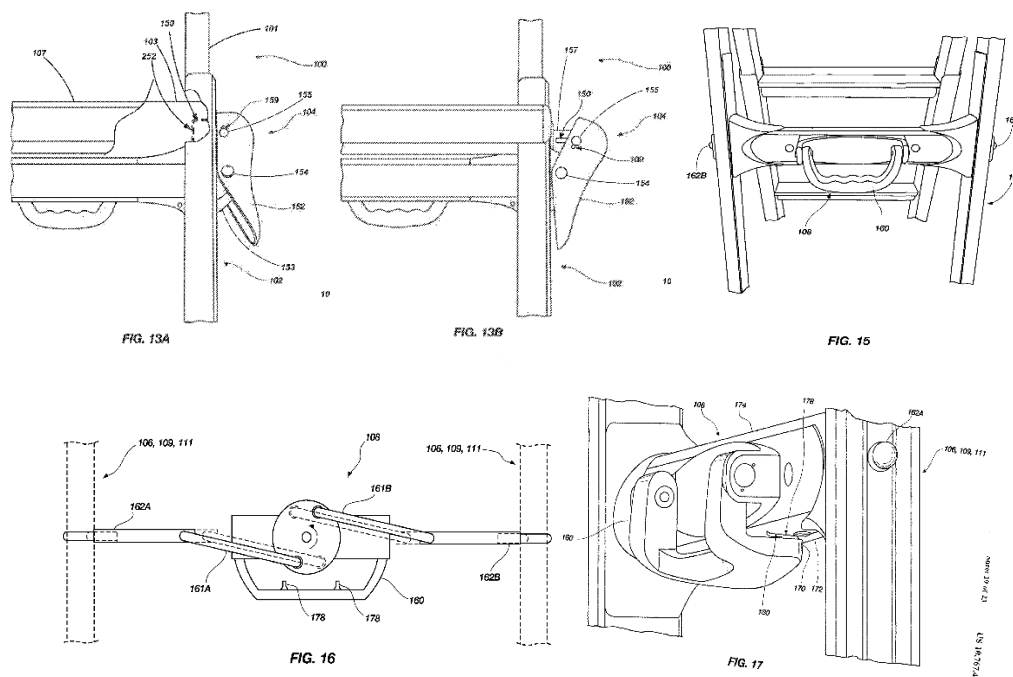
As for the “disposed within” term, Little Giant proposed a construction of the broader phrase in which the term is situated. This proposal suggested that the “disposed within” term should be construed to mean “hidden or covered by.” However, the Court rejected that proposal and construed “disposed within” to mean “placed inside of”

⁶ As discussed below, the Court finds that there is no genuine issue of material fact and Tricam is entitled to judgment of non-infringement of the cavity limitation as a matter of law. As a result, the Court need not address the parties’ arguments in their cross-motions for summary judgment concerning infringement of the “first component” or the “retaining mechanism” limitations. Pl.’s Infringement Mem. at 4, 11, 15, 22; Def.’s Mem. in Supp. of Summ. J. (“Def.’s SJ Mem.”) at 9, 18–19 (Doc. 169).

because such a construction was consistent with the term’s plain and ordinary meaning and the intrinsic evidence in the specification. *Id.* at 15. In addition, the Court explained that when Little Giant originally applied for the ’416 patent, it claimed a bracket that was “concealed” between the rail and the first component, but the examiner rejected Little Giant’s application as anticipated by U.S. Patent Publication No. 2006/0169539 (“Grebinoski”). *Id.* at 15–16 (citing Doc. 73-1 at 7, 10). To overcome the rejection, Little Giant amended its claim to cover a bracket that is “disposed within a cavity defined by the first component.” *Id.* at 16. The Court found that under the doctrine of prosecution disclaimer, Little Giant could not reclaim, through its proposed construction of “hidden or covered by,” scope that it had surrendered during prosecution to secure issuance of the patent. *Id.* at 15–21.

The Court therefore construed the term “cavity” to be a “hollowed-out space (not passing all the way through).” *Id.* at 25–26. Little Giant had provided two different constructions of the term in its efforts to have the Court construe the entire phrase in which the cavity limitation appears: (1) “a hollowed out space (not passing all the way through),” and (2) “a hollowed out space (not passing all the way through) . . . so as to hide or cover more than a majority of the first bracket.” *Id.* at 21. The Court rejected the second reading because adopting it would result in redundancy and would allow Little Giant to use a construction of the cavity term to reintroduce the very same claim scope it had surrendered to overcome Grebinoski. *Id.* at 23–24. With respect to Little Giant’s initial proposal, the Court noted that Tricam’s proposed construction also referred to a cavity as a “hollowed-out space (not passing all the way through),” and the Court found

that this apparent agreement between the parties was supported by the plain and ordinary meaning of cavity as well as evidence within the specification itself. *Id.* at 22–23. Specifically, the Court pointed to Figures 13A, 13B, and 15 through 17, each of which “features a hollowed-out space defined by the first component, inside of which one finds more than a majority of the first bracket.” *Id.* These figures are pictured below.



Finally, the Court explained the basis for its construction of the cavity term as follows:

The intrinsic evidence also suggests that the hollowed-out space in the handle does not pass all the way through that handle, and both parties suggest inclusion of language to that effect. Conversely, the notion that a component includes a “hollowed-out space” does not easily lend itself to an interpretation in which the described cavity passes all the way through first component. One might more naturally describe such a component as containing an “opening” or a “tunnel,” rather than a “cavity.” The specification and the figures referenced above also support that a person of ordinary skill in the art would understand that the claimed cavity “does not

pass all the way through” the first component. For example, the lever-style handle depicted in Figure 13A has a hollowed-out space in its mass that does not pass all the way through. Accordingly, the Court finds that a construction consistent with these essentially agreed-upon meanings is strongly supported by the intrinsic evidence, and overall, Tricam’s proposal represents the better reading of the term “cavity.”

Id. at 23.

IV. Expert Reports

In support of their positions, the parties point to evidence submitted by their expert witnesses, Fred Smith for Little Giant and Jon Ver Halen for Tricam. Smith provided an initial report on October 21, 2022; a rebuttal report on April 7, 2023, and a report in reply on April 28, 2023. Smith Report (Doc. 173-18); Smith Rebuttal (Doc. 173-19);⁷ Smith Reply (Doc. 173-20). Ver Halen provided an initial report on October 10, 2022; a supplemental report on October 27, 2022; and a rebuttal report on April 6, 2023. Ver Halen Report (Doc. 180-4); Ver Halen Supplement (Doc. 180-5); Ver Halen Rebuttal (Doc. 180-6).

A. Smith’s Cavity Opinions

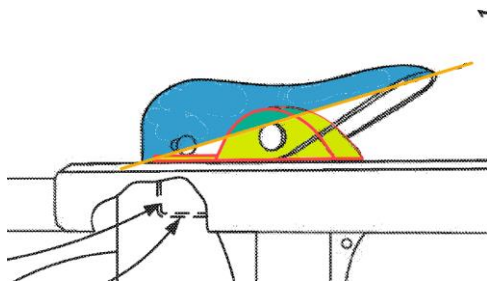
In his initial report Smith states his opinion that Tricam’s Accused Ladders have the cavity element. Smith Report 17–19. Smith acknowledges the Court’s construction of the cavity limitation and then discusses how that construction, in his view, applies to the Accused ladders in a chart. *Id.* ¶¶ 35–37. He begins by excerpting a picture of the Tricam locking mechanism and stating his conclusion that when Tricam’s handle “is in the first

⁷ Smith’s Rebuttal Report addresses issues of invalidity, which the Court has determined it need not resolve.

rotational position, more than a majority of the first bracket . . . is placed inside of a hollowed-out space (that does not pass all the way through) defined by the first component. . . .” *Id.* at 17. Smith does not affirmatively explain, at the outset, how Tricam’s handle does not pass all the way through; instead, he approaches the concept by responding to Tricam’s non-infringement contentions set forth in its responsive claim chart.

Smith states that Tricam believes that “the phrase ‘not passing all the way through’ necessarily means it is bounded on all sides but one and excludes spaces that are ‘not bounded on the ends.’” *Id.* at 18. According to Smith, Tricam’s reading “adds an additional limitation to the Court’s construction, such that a cavity is a space that doesn’t pass all the way through *in all directions*.” *Id.* (emphasis in original). He further opines, that “[a] cavity need not be bounded on all sides but one, as Tricam contends, for it to be a space that doesn’t pass all the way through such that it is capable of having something placed inside of it. One would have no difficulty in determining where to put [the fillings] if told to put them inside a taco shell—one would understand to place them inside the hollow space defined by the raised sides and bottom of the shell.” *Id.*

In addition, Smith states that adopting Tricam’s interpretation that the claimed cavity must be bounded on all sides but one would mean that the preferred embodiment in Figures 13 and 14 of the ’416 patent would not contain the cavity limitation. *Id.* Smith excerpts an image (included below) from the ’416 patent to illustrate his interpretation of the claimed cavity, suggesting that the line he superimposed on the image passes all the way through the hollowed out space in one direction, but does not pass through in others.



Id. In addition, Smith opines that because the cavity’s function is to house more than a majority of the bracket, the entire hollowed-out space, including the portion that is not bounded on all sides but one, must be considered part of the cavity; otherwise, the portion that is bounded on all sides but one contains less than a majority of the bracket. *Id.* at 19.

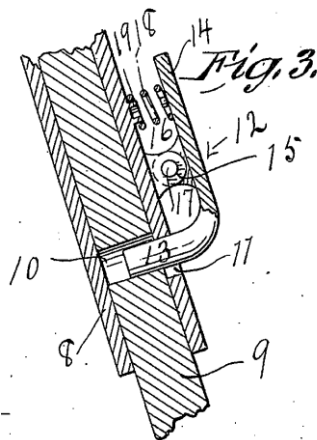
Smith also states that although a line can be drawn to pass through the open space beneath the black handle of Tricam’s locks which sit atop Tricam’s bracket, Tricam and its expert do not dispute “that this hollowed out space does not go all the way through in every other direction, literally satisfying the Court’s claim construction and allowing the bracket to be placed inside of that space.” Smith Reply ¶ 29. He observes that the lever-style handle depicted in the ’416 patent’s figures forms “wings” similar to those seen in Tricam’s locks; a line can be drawn passing through the space beneath that lever-style handle and between its “wings”; and a majority of the bracket sits within the entire hollowed-out space. *See id.* ¶¶ 30–34.

B. Smith and the Tidyman Reference

In offering this interpretation of the term cavity, Smith further relies on a September 16, 2019 office action in which the examiner cited U.S. patent 1,303,416 (“Tidyman”) in rejecting Little Giant’s claims. Smith Report at 20. Neither Little Giant

nor Smith referred to Tidyman in Little Giant's submissions when the parties sought claim construction. Tidyman is a patent addressed to a sawhorse with extendable legs, which can be locked in place by an L-shaped lever that extends through aligned openings in the legs. *Id.*; Miller Decl. (July 26, 2023), Ex. I (Tidyman) (Doc. 180).

In the September 16, 2019 office action, the examiner rejected Little Giant's claims as anticipated by Tidyman. In particular, the examiner referenced Figure 3 of the Tidyman specification, which depicts the locking mechanism that holds the claimed sawhorse's legs in place.



Tidyman at 1; Miller Decl. (July 26, 2023), Ex. M, Office Action (Sept. 16, 2019), at 5. In Tidyman, 14 is the longer arm of the lever, 16 is the outer ear on either side of the bracket 15, which is also an apertured ear. Tidyman Col. 2:65–77. In rejecting Little Giant's claim for “a substantial amount of the first bracket is disposed within a cavity defined by the first component,” the examiner provided the following explanation:

the cavity is formed by 16 and 14 such that the a substantial amount of the bracket 15 is with the cavity as can be seen via fig.'s 1–3 – emphasis is noted on the term ‘substantial’ and the phrase ‘substantial amount’ as it is being interpreted with the broadest reasonable interpretation as claimed – further

note that even if only 1 ear 16 is part of the first component 14, the bracket 15 would still be within a cavity formed between the ‘L-shape’ of 14 and 16 as can be seen between fig.’s 1-3 such that the limitation is met whether there are two ears 16 flanking bracket 15 or merely one ear 16.

Office Action (Sept. 16, 2019) at 4.⁸

Smith states that “[t]he cavity of the Tidyman locks is identically the situation with the taco shaped Tricam Speed Locks and the examiner understood, as did the Court, that the cavity need not be bounded in all directions.” Smith Report at 21. As a result, he concludes that “Tricam’s proposed application of the concept of ‘not passing all the way through’ is contrary to the examiner’s view, which was the source of the Court’s construction, because the Tidyman handle would not have a cavity under Tricam’s view.” *Id.*

C. Ver Halen’s Opinions

In his April 6, 2023 Rebuttal Report, after excerpting portions of the Court’s Claim Construction Order, Ver Halen states that the “knob of the Tricam products when in a first rotational position does not result in a ‘substantial’ amount of Tricam’s ramp being ‘disposed within a cavity defined by the first component’ as construed by the Court.” Ver Halen Rebuttal ¶ 7(d). Ver Halen explains that “Tricam’s knob includes a pair of wings that form a space open on three sides, including both ends so that the wedge portion of the Tricam wedge cam passes all the way through and beyond this space at each end.” *Id.* ¶ 92. Because this space passes all the way through, Ver Halen concludes

⁸ When Little Giant responded to the examiner’s rejections, it amended claim language regarding a two-position retaining mechanism, but it made no changes to the cavity language. Miller Decl. (July 26, 2023), Ex. N, 12/16/19 Response.

that it is not a cavity as construed by the Court. *Id.* The Accused Ladders also have a “boss” atop the wedge that sits inside a hollowed-out space within the knob that does not pass all the way through, but they are much smaller than the wedge/bracket of Tricam’s locking mechanism. *Id.* ¶¶ 91, 93. Other hollowed-out spaces set into the underside of the Tricam handle that do not pass all the way through enclose no portion of the Tricam ramp and “are only present to reduce the amount of plastic required and aid in molding the knob.” *Id.* ¶ 93. By Ver Halen’s calculation, the portion of the boss that sits inside the cavity of the Tricam handle constitutes approximately 20% of the ramp-and-boss/bracket. *Id.*

Ver Halen finds it significant that the “wings of the [Tricam] knob define a space that is open on three sides” and it “passes all the way through” because “it is not bounded on the ends.” *Id.* ¶ 97. In further reference to the Claim Construction Order, Ver Halen likens open space created by the wings to an “opening” or a “tunnel.” *Id.* Ver Halen disagrees with Smith’s assessment that the portions of the ramp that the wings of Tricam’s knob sit atop are disposed within a cavity because Smith’s report erroneously suggests that portions of the ramp that are merely concealed by the knob are placed inside a hollowed-out space. *See id.* ¶ 98. Not only does he take issue with Smith’s calculations, but Ver Halen also notes that Smith does not address the effect of prosecution history estoppel and Little Giant’s amendments of its original claim language to overcome the examiner’s objections based on Grebinoski. *See id.* ¶¶ 39, 98, 100, 105.

Ver Halen also disagrees with Smith regarding the significance of the Tidyman reference and the examiner’s observations about the Tidyman handle containing a cavity.

Ver Halen Rebuttal ¶ 113. He points out that in the February 19, 2020 office action, the examiner focused on a defining a cavity as a “hollowed out space [not passing all the way through].” *Id.* (quoting 2/19/20 Office Action). According to Ver Halen, both he and Smith agree that the Tidyman space passes all the way through, and the subsequent reasons for allowance reflected in the February 2020 office action suggest that “Tidyman had an opening or a tunnel not a cavity.” *Id.* Ver Halen also noted that having the bracket “[d]isposed within *a cavity* was required to gain allowance,” which the Court construed to mean “placed inside of” a cavity[, which in turn] differs substantially from something in a tunnel or opening that passes all the way through.” *Id.* ¶ 114.

In addition, Ver Halen disagrees with Smith’s assessment that the Speed Locks have a cavity that is similar to the lever-style handle in the preferred embodiment of the ’416 patent. *Id.* ¶ 110. According to Ver Halen, the Tricam knob is not “bounded in enough directions that the hollowed-out area does not pass all the way through the handle. This space passes all the way through and out opposite sides.” *Id.* Further, Ver Halen finds it significant that “[o]ne end of the Little Giant lever is closed, [and] there is no closed end on the Tricam handle.” *Id.* Ver Halen suggests that Smith has misconstrued Tricam’s argument and that Tricam has not taken the position that “a cavity has to be bounded on all sides but one”; rather, Ver Halen contends that the portion of the Speed Lock that Little Giant says is a cavity is not because it is not bounded on the ends. *Id.* ¶ 112. VerHalen suggests that the analogy Smith draws of knowing where to put the fillings in a taco is irrelevant and ignores the Claim Construction Order. *Id.*

DISCUSSION

I. Legal Standard

A. Summary Judgment

Summary judgment is appropriate when there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(a); *Celotex Corp. v. Catrett*, 477 U.S. 317, 322–23 (1986); *Dowden v. Cornerstone Nat’l Ins. Co.*, 11 F.4th 866, 872 (8th Cir. 2021). The moving party must demonstrate that the material facts are undisputed. *Celotex*, 477 U.S. at 322. A fact is “material” only if its resolution could affect the outcome of the suit under the governing substantive law. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). When the moving party properly supports a motion for summary judgment, the party opposing summary judgment may not rest on mere allegations or denials, but must show, through the presentation of admissible evidence, that specific facts exist creating a genuine issue for trial. *Id.* at 256; *McGowen, Hurst, Clark & Smith, P.C. v. Com. Bank*, 11 F.4th 702, 710 (8th Cir. 2021). A dispute of fact is “genuine” only if “the evidence is such that a reasonable jury could return a verdict for the nonmoving party.” *Anderson*, 477 U.S. at 248. Courts must view the inferences to be drawn from the facts in the light most favorable to the nonmoving party. *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 587–88 (1986); *Irvin v. Richardson*, 20 F.4th 1199, 1204 (8th Cir. 2021).

B. Patent Infringement and Summary Judgment

A patent is infringed when a person “without authority makes, uses, offers to sell, or sells any patented invention, within the United States . . . during the term of the patent” 35 U.S.C. § 271(a). “Literal infringement of a claim exists when every limitation recited in the claim is found in the accused device.” *Kahn v. Gen. Motors Corp.*, 135 F.3d 1472, 1477 (Fed. Cir. 1998). “If any claim limitation is absent from the accused device, there is no literal infringement as a matter of law.” *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). Even if a product does not literally infringe a patent, it may still infringe under the doctrine of equivalents. *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997). The most common framework for evaluating equivalence is whether the accused product performs substantially the same function in substantially the same way to obtain substantially the same result. *See Mylan Institutional LLC v. Aurobindo Pharma Ltd.*, 857 F.3d 858, 866–67 (Fed. Cir. 2017) (citing *Graver Tank & Mfg. Co. v. Linde Air Prod. Co.*, 339 U.S. 605, 608, 609 (1950)). “[T]he doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole. It is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety.” *Warner-Jenkinson Co.*, 520 U.S. at 29.

Where, as here, a patent’s claims have already been construed, summary judgment as to non-infringement requires the court to determine “whether the properly construed claims read on the accused device.” *Pitney Bowes, Inc. v. Hewlett–Packard Co.*, 182 F.3d 1298, 1304 (Fed. Cir. 1999). An accused infringer may prevail at the summary judgment

phase either by producing evidence that would preclude a finding of infringement, or by showing that the evidence on file fails to create a material factual dispute as to any essential element of the patentee's case. *See Novartis Corp. v. Ben Venue Labs., Inc.*, 271 F.3d 1043, 1046 (Fed. Cir. 2001). "Whether a claim is infringed under the doctrine of equivalents may be decided on summary judgment if no reasonable jury could determine that the limitation and the element at issue are equivalent." *Zelinski v. Brunswick Corp.*, 185 F.3d 1311, 1317 (Fed. Cir. 1999).

II. Proper Construction of the Cavity Limitation

As discussed, the cavity limitation appears in the following phrase of Claim 1 of the '416 patent: "a substantial amount of the first bracket is disposed within a cavity defined by the first component." After construing several terms within this phrase, the Court adopted the following construction:

more than a majority of the first bracket is placed inside of a hollowed-out space (not passing all the way through) defined by the first component.

Claim Construction Order 25–26.

Both Little Giant and Tricam argue that they are entitled to summary judgment on the issue of infringement of the cavity limitation. However, Little Giant argues that even though the Court has already issued a construction of this limitation, we cannot yet proceed to the second step in an infringement analysis. Little Giant suggests that the parties disagree about what the Court's construction means, so the infringement dispute on this issue "collapses to a legal claim construction dispute." Pl.'s Infringement Mem. at 16 & n.12. In essence, Little Giant argues that the Court's construction leaves open the

question of what “not passing all the way through” means in the context of the ’416 patent. It contends that “the parties’ dispute here warrants a clarifying construction from the Court for ‘cavity’ to ensure that the jury is not improperly tasked with resolving the legal question of claim construction.” Pl.’s Mem. in Opp’n to Def.’s Mot. for Summ. J. (“Pl.’s SJ Opp’n”) at 4 n.2 (Doc. 194). Accordingly, Little Giant proposes that the cavity term must be construed in the following manner:

[T]he proper understanding of the Court’s construction must be that a “cavity” is a hollowed-out space in a mass that doesn’t pass all the way through in enough directions to allow more than a majority of the bracket to be placed inside even if the space passes all the way through in some directions.

Pl.’s Infringement Mem. at 21.⁹ The Court rejects Little Giant’s request to rewrite its claim construction in this manner for several reasons.

A. Unsupported Request for Reconsideration

For starters, though Little Giant does not call it one, it has essentially made an unsupported request for reconsideration of the Claim Construction Order. At the summary judgment hearing, Little Giant suggested that courts regularly revisit their constructions or engage in rolling construction throughout the course of litigation. Although it is “true that a court’s prior claim construction can be altered, alteration generally requires the parties to present new evidence.” *Snyders Heart Valve LLC v. St. Jude Med.*, No. 18-cv-2030 (JRT/DTS), 2020 WL 1445835, at *4 (D. Minn. Mar. 25,

⁹ Having previously offered two different proposals for how to construe this term at the claim-construction phase, this marks Little Giant’s third suggestion for how to understand the scope of the claimed “cavity” and the broader phrase in which it appears. Claim Construction Order at 21 (citing Doc. 70 at 16; Doc. 81 at 9).

2020) (citing *Pfizer, Inc. v. Teva Pharms., USA, Inc.* 429 F.3d 1364, 1377 (Fed. Cir. 2005)). Here, Little Giant has not presented any new evidence in support of its latest proposed construction of the cavity term. Instead, it seeks only to “relitigate old issues.” *Id.*, 2020 WL 1445835, at *4 n.7 (quoting *Caddy Prods., Inc. v. Am. Seating Co.*, No. 05-cv-800 (JRT/FLN), 2008 WL 2447294, at *1 (D. Minn. June 13, 2008)).

This is also not a situation in which, over the course of the litigation, the Court’s “understanding of the technology [has] evolve[d].” *See Pfizer, Inc.*, 429 F.3d at 1377. As a result, a “rolling claim construction” is out of place in this case. *Id.* (discussing how “district courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves”).

Little Giant appears to be seeking reconsideration of the Claim Construction Order by a different name. In suggesting that the Court should issue a clarifying construction, Little Giant largely repeats arguments previously raised and presents arguments it could have but did not raise before. These are not grounds for reconsideration. *See Corning Inc. v. Wilson Wolf Mfg. Corp.*, No. 20-cv-700 (DWF/TNL), 2023 WL 3306506, at *4–5 (D. Minn. May 8, 2023) (denying defendants request for reconsideration of claim construction order where the defendants had not presented “any new, material evidence that could not have been presented at the *Markman* stage of this litigation”). And the Court finds that Little Giant has failed to show that its prior construction of the cavity term is clearly erroneous. *Snyders Heart Valve*, 2020 WL 1445835, at *4 (indicating that the court would not revisit its prior claim constructions unless they were shown to be

“clearly erroneous and would work a manifest injustice”) (quoting *Christianson v. Colt Indus. Operating Corp.*, 486 U.S. 800, 817–18 (1988)).

Moreover, this is not a case where the Court must provide further clarification of its construction to avoid the kind of error Little Giant warns about. Little Giant asserts that under *Sound View Innovations, LLC v. Hulu, LLC*, 33 F.4th 1326 (Fed. Cir. 2022) and *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351 (Fed. Cir. 2008), if the Court declines to engage in further construction of the cavity term, it would err by leaving the legal issue of claim construction to the jury to resolve. In both *Sound View* and *O2 Micro*, the district courts’ claim constructions were deemed inadequate for the second step of an infringement analysis because they failed to resolve a dispute about the meaning of a claim term by issuing no construction at all. *Sound View*, 33 F.4th at 1336–37 (finding error because the district court treated the claim term “buffer” and the “caches” in the accused edge servers as completely distinct based solely on the fact they had a different name); *O2 Micro*, 521 F.3d at 1361 (district court failed to construe claim term “only if” where “the parties disputed not the *meaning* of the words themselves, but the *scope* that should be encompassed by this claim language,” namely whether it allowed exceptions to claim language “only if said feedback signal is above a predetermined threshold”). Unlike *Sound View* and *O2 Micro*, the Court has not failed to or declined to issue a construction of the cavity term. To the contrary, after reviewing significant briefing and the intrinsic and extrinsic evidence and holding a lengthy claim-construction hearing, the Court issued a construction of the cavity limitation. Indeed, the construction adopted was, in many respects, one of the two previously advocated by

Little Giant. What is happening now is that Little Giant finds that construction less than supportive of its infringement position. *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) (“Restating a previously settled argument does not create an ‘actual dispute regarding the proper scope of the claims’ within the meaning of *O2 Micro*.”).

Little Giant also cites *Power-One, Inc. v. Artesyn Tech., Inc.*, 599 F.3d 1343 (Fed. Cir. 2010), which discusses the district court’s obligation to issue a construction that is sufficiently precise to ensure a jury fully understands the court’s rulings and what is covered by the claims. *Id.* at 1348. But Little Giant does not explain why, if this case were to go to a jury, they could not fully understand an instruction based on the existing construction of the cavity limitation—a hollowed-out space (not passing all the way through). If there were disputed issues of material fact, it seems quite likely that a hypothetical jury could draw its own conclusions about whether Tricam’s handle has a space that does or does not pass all the way through. And because the Court grants summary judgment to Tricam, no jury will be asked to grapple with this issue.

Accordingly, Little Giant has not persuaded the Court that reconsideration of its previous construction or clarification is necessary to avoid error.

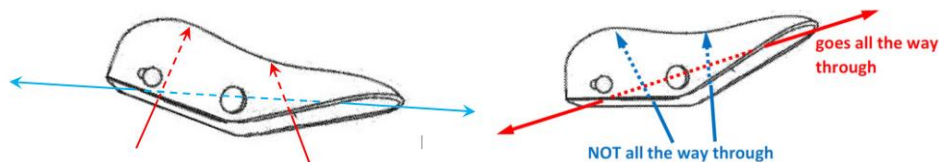
B. Not Passing All the Way Through

Not only does the Court find that reconsideration of its construction of the cavity limitation is unnecessary, but the Court also finds Little Giant’s third proposed construction unsupported and unpersuasive on its merits.

1. Drawings and Preferred Embodiment

As noted above, in arguing for the clarifying construction it seeks, Little Giant repeats several arguments that it previously raised during the claim-construction phase of the litigation. Relying on drawings of the lever-style handle, Little Giant previously asserted that “the handle shown in the drawings of the ’416 patent show [sic] a hollowed out space that passes all the way through in one direction (shown with [a] blue line . . .) yet doesn’t pass all the way through in enough directions to hide most of the bracket.” Pl.’s Opening Claim Construction Br. (“Pl. *Markman* Br.”) at 14–15 (Doc. 70). Little Giant relies on similar drawings and arguments now to make virtually identical arguments. Pl.’s Infringement Mem. at 5 (including drawings of lever-style handle from Smith Report at 17–19). Further, in both the claim-construction and summary-judgment briefing, Little Giant argued that the cavity limitation’s concept of “not passing all the way through” must be understood to allow the space to pass all the way through in at least one direction—otherwise, the construction would improperly exclude a preferred embodiment. Pl.’s *Markman* Br. at 15; Pl.’s Infringement Mem. 15–16 n.11.

The Court is not persuaded that Little Giant’s drawings support its proposed construction nor that rejecting its latest proposed construction excludes a preferred embodiment. The drawings Little Giant emphasizes in their claim-construction and summary-judgment briefing, like those depicted below, are not based upon any specific language in the claims themselves, and they are not taken from the specification or the file history.



Consequently, these diagrammatic depictions of the lever-style handle do not reflect statements by the inventor or the examiner that would lead a person of ordinary skill in the art to understand the scope of the claimed cavity.

In addition, Little Giant’s requested clarification and its drawings purporting to show that the preferred embodiment *does* pass all the way through in some directions ignore both the context of the claim language and the actual illustrations that are found in the specification. When Claim 1 of the ’416 patent introduces the phrase in which the cavity term appears, it refers to the “first component” (the handle) being in “the first rotational position.” ’416 patent, col. 10:44–45. The specification, through certain illustrations, offers only one real hint as to what the scope of the claimed cavity might be. When the lever-style handle is depicted in the first rotational position in the drawings in the specification, most notably Figure 13A, the hollowed-out space defined by the handle sits parallel to the outer rails of the ladder. One end of the handle is flush with the rail. Therefore, it is bounded on one end by the rounded, upper portion of the handle, open on the other end of the handle, and blocked off on the underside by the plane of the rail. In that configuration, the hollowed-out space does not pass all the way through in any direction.

Additional context for the cavity in the surrounding language of Claim 1 undermines Little Giant’s third proposed construction. The cavity is a hollowed-out space

that that has more than a majority of the bracket “disposed within it.” The Court has construed “disposed within” to mean that the bracket is “placed *inside* of” the opened space in the handle. The most natural understanding of the bracket being “disposed within” the open space of the handle is that the cavity surrounds or encloses the bracket so that the open space does not pass all the way through. To conclude that Little Giant’s interpretation is correct, and that any other construction excludes a preferred embodiment, one must ignore both this surrounding claim language and the existence of the rails. As a result, the Court rejects Little Giant’s argument that “not passing all the way through” actually means something akin to—passing all the way through in some directions, but not in every direction.¹⁰ Rather, the cavity claimed by Little Giant is an hollowed-out space that is not unbounded on two ends when it is in the first rotational position and that is sufficiently closed off that it surrounds or encloses the bracket.

2. Grebinoski and Tidyman

Little Giant further argues that the Court should rethink its construction based on a couple of additional arguments premised on the file history that it could have raised earlier but did not. First, Little Giant points to the handle depicted in Grebinoski, suggesting that it shows a cavity that is consistent with its current proposal. Second, Little Giant refers to the examiner’s rejection due to the Tidyman prior art, arguing that the file history strongly supports its concept of a cavity that passes all the way through in some

¹⁰ The Court also notes that to the extent the handles depicted in Figures 15, 16, and 17 in the specification illustrate the claimed cavity at all, they similarly reveal that there is no space passing all the way through such a cavity and the open space of the handle surrounds or encloses the bracket while a rail or rung blocks off the opening underneath the handle.

directions. As an initial matter the Court is troubled by the litigation strategy Little Giant seems to be employing, trying for a second (or third) bite at the claim construction apple with new arguments when its earlier efforts were unsuccessful. But as explained below, the Court finds neither argument compelling aside from their timing.

Start with Little Giant's reliance on Grebinoski. Little Giant says that Grebinoski "defines a cavity . . . which passes all the way through in some directions" and points to its March 8, 2019 response to the examiner's rejection. Pl.'s Infringement Mem. at 6. However, in response to the initial rejection based on Grebinoski, Little Giant merely stated that "Grebinoski does not disclose any portion of the bracket . . . ever being within a cavity of the lever." Miller Decl. (July 26, 2023), Ex. L, 3/8/19 Response to Office Action. Nothing about this statement clearly indicates Little Giant's belief that the Grebinoski handle, in fact, contains the cavity at all. Nor does Little Giant's effort to distinguish the Grebinoski prior art provide support for the interpretation of "not passing all the way through" that Little Giant now wants the Court to adopt. In short, the communications with the examiner regarding Grebinoski say nothing about what does and does not constitute the claimed cavity.

Turning to Tidyman, Little Giant conceded that it presented no argument based on Tidyman in its claim-construction briefing. At the summary-judgment hearing, Little Giant asserted that Tidyman first came up when the parties' experts submitted their reports after the Court issued its Claim Construction Order, but it also contends that Tidyman contains the most explicit statement concerning a cavity in the entire file history. Summ. J. Hr'g Tr. at 31–32. This explanation is unconvincing.

If Tidyman were as consequential to the proper understanding of the scope of the claimed cavity as Little Giant asserts, the Court has no doubt, given the enormous resources that both parties have poured into this case, that the litigants would have relied upon it at the claim-construction phase. Little Giant certainly has presented no argument explaining why this aspect of the file history could not have been raised earlier—it plainly could have been presented before but wasn’t. *See Niazi Licensing Corp. v. Bos. Sci. Corp.*, No. 17-cv-5094 (WMW/BRT), 2019 WL 6827588, at *1 (D. Minn. Dec. 13, 2019) (“A motion for reconsideration cannot be employed to . . . introduce . . . evidence or arguments that could have been made. . .”). As such, the Court is skeptical that the discussion of Tidyman from the file history informs the proper construction of cavity.

Moreover, in considering the merits of Little Giant’s Tidyman argument, the Court finds that the discussion in the file history and the examiner’s comments are entitled to little weight in construing the scope of the claimed cavity. The examiner initially rejected the language in Claim 1 in light of the Tidyman prior art, and in relevant part, the examiner stated that Tidyman teaches a cavity. The examiner posited that the Tidyman handle depicted in one of the Tidyman drawings would constitute a cavity even if it merely sat atop the bracket in an L-shaped configuration with one of the handle’s two protruding ears removed. But the Court finds these statements fail to define the scope of the claim.

As an initial matter, patent examiners apply very broad standards of construction, whereas district courts are required to arrive at the “proper construction; that is, the court construes the patent claims in a manner that most naturally aligns with the patent’s

description of the invention” in light of “the specification, prosecution history, prior art, and other claims.” *Geospan Corp. v. Pctometry Int’l Corp.*, No. 08-cv-816 (ADM/JSM), 2012 WL 5942005, at *5 (D. Minn. Nov. 28, 2012) (internal quotations omitted). The examiner’s discussion of the cavity concept in the September 16, 2019 Office Action applied an extraordinarily broad interpretation of what constitutes a cavity. That interpretation ignores and conflicts with language that the parties agreed should be included in the proper construction of the cavity limitation—“not passing all the way through.”

There are several other problems with the argument Little Giant makes in reliance on Tidyman. First, removing one of the ears from the Tidyman handle eliminates the possibility that one could actually conceive of a hollowed-out space within the mass of a handle at all. Second, the examiner’s discussion of the Tidyman structure does not indicate any appreciation for whether the space between the Tidyman ears passes all the way through, which is a feature Little Giant concedes is claimed by the ’416 patent. Third, Little Giant never responded to this aspect of the examiner’s rejection and the examiner allowed the claims without any amendment of the cavity language. It was not central to the ultimate conclusion or the dialog between the inventor and examiner. As a result, the public looking at this file history would have no way of knowing the inventor’s own position on whether the cavity of Claim 1 is broader or narrower than the examiner’s assessment of Tidyman. Fourth, the examiner’s assessment of Tidyman as possessing the claimed cavity does not consider the greater context of the claim in which more than a majority of the bracket is “disposed within” the open space. In either configuration of the

Tidyman handle (with both ears or with one ear removed) the bracket is not significantly surrounded or enclosed by the sides and the rails such that the bracket is placed inside of the open space inside the handle. And finally, the examiner's interpretation of the Tidyman handle as possessing a cavity even with one ear removed conflicts with the prosecution history in which Little Giant surrendered claim scope for a first component that merely hides or conceals a substantial amount of the first bracket when in the first rotational position.

For all the foregoing reasons, the Court finds that Little Giant's efforts to obtain a new construction of the cavity term are unsupported, whether they are characterized as seeking reconsideration, clarification, a new construction, or given some other label. The Court rejects Little Giant's proposed construction that the cavity is "a hollowed-out space in a mass that doesn't pass all the way through in enough directions to allow more than a majority of the bracket to be placed inside even if the space passes all the way through in some directions."

Instead, the Court's original construction—"more than a majority of the first bracket is placed inside of a hollowed-out space (not passing all the way through) defined by the first component"—stands.

III. Tricam's Motion to Exclude Expert Testimony

One additional detour is required before addressing the issue of infringement of the cavity limitation. Tricam argues that the Court should exclude the testimony of Little Giant's expert, Fred Smith, concerning infringement of the cavity limitation. Tricam does not argue that Mr. Smith is unqualified to offer such an opinion. Instead, it argues that the

Court should exclude Mr. Smith’s infringement opinions because he failed to apply the Court’s construction of that term.¹¹ The Court agrees.

“The admissibility of expert testimony is an issue of law for the district court to decide and is governed by Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).” *CellTrust Corp. v. ionLake, LLC*, 625 F. Supp. 3d 810, 851 (D. Minn. 2022). The party seeking to introduce expert testimony has the burden to show it is admissible by a preponderance of the evidence, and district courts have considerable discretion in ruling on issues of admissibility. *Id.* at 852.

“Expert testimony that conflicts with a district court’s claim construction is inadmissible.” *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, No. 17-cv-5096 (WMW/BRT), 2020 WL 5512507, at *6 (D. Minn. Sept. 14, 2020) (citing *Finjan, Inc.*, 626 F.3d at 1207). A party may not use expert testimony to “resurrect a claim construction that the district court already rejected.” *Finjan*, 626 F.3d at 1207. District courts hearing patent-infringement suits may exclude expert testimony when it is “based on a claim construction that is materially different from the construction adopted by the parties and the court.” *Treehouse Avatar LLC v. Valve Corp.*, 54 F.4th 709, 715 (Fed. Cir. 2022) (affirming district court’s decision to exclude portions of patentee’s expert’s report

¹¹ Tricam also argues that the Court should exclude several other aspects of Mr. Smith’s testimony. For example, it argues that Smith’s opinion that the ’416 patent is not anticipated by Krause should be excluded because it contradicts concessions that Little Giant made in response to Tricam’s invalidity contentions. Tricam also argues that the Court should exclude Smith’s opinions concerning the infringement of the “first component” limitation because Smith (1) fails to apply the Court’s claim construction, (2) substitutes a new theory of the “way” the term performs its function in applying the function-way-result test, and (3) provides only a conclusory analysis of the doctrine of equivalents. Because the Court decides this case on narrower grounds, it does not reach these issues and denies Tricam’s motion without prejudice in regard to these arguments.

where the expert applied the plain and ordinary meaning of a claim limitation and not the construction that the parties had agreed upon and the court had adopted).

Based on the Court's review of Smith's initial and rebuttal reports, it is apparent that he reviewed and seriously considered the Claim Construction Order, including the construction the Court gave to the cavity limitation. However, in doing so, the Court finds that Smith engaged in further construction of the Court's construction, based his opinions about infringement on an understanding of the cavity limitation that is materially different from the Court's construction, and ultimately seeks to revive a construction of the limitation that the Court already rejected.

Smith reached the conclusion that the space between the wings on either side of the Tricam knob constitutes the cavity claimed in the '416 patent because, even though that space passes all the way through in at least one direction—the space indisputably passes all the way through parallel to the rails when the handle is in the first, *i.e.* locked, position—it “does not go all the way through in every other direction, literally satisfying the Court's claim construction.” Smith Reply ¶ 29 (underlining in original). But as explored above, that is not the construction that the Court adopted. Smith essentially reconstrues the cavity limitation to mean any hollowed-out space that does not pass through in every direction. *See EZ Dock, Inc. v. Schafer Sys., Inc.*, No. 98-cv-2364 (RHK/AJB), 2003 WL 1610781, at *12 (D. Minn. Mar. 8, 2003) (“[P]arties are not entitled to ‘construe’ the Court's claim construction.”).

Smith's infringement analysis also depends on an understanding of the cavity limitation that is materially different from the Court's construction because it would

encompass hollowed-out spaces, like a tunnel, that do pass all the way through. His interpretation is that a hollowed-out space defined by the first component does not pass all the way through even if a person could draw an arrow through the open space of the first component in any direction. Smith Report at 18 (“Tricam’s basis for disputing the presence of this element is Tricam’s belief that the phrase ‘not passing all the way through’ necessarily means it is bounded on all sides but one and excludes spaces that are ‘not bounded on the ends.’”). His reports reference drawings in which he depicts arrows passing all the way through opening on the underside of the lever-style handle depicted in the ’416 patent’s illustrations, but his drawings disregard the presence of the rails. *Id.* at 18–19. Smith also based his infringement analysis and understanding of what is and is not a cavity on a prolonged discussion on the references to Tidyman in the file history, going so far as to suggest that the “examiner’s view” of a cavity was the basis for the Court’s construction.¹² *Id.* at 20–22.

This analysis contradicts the Court’s construction because Smith essentially determined that “not passing all the way through” means that a hollowed-out space in a handle would literally have the claimed cavity even if it passed all the way through two unbounded ends. This would mean that a tunnel, which the Court expressly distinguished

¹² The Court has found in this Order that the Tidyman reference in the file history does not inform the scope of the claimed cavity. It is entirely incorrect to say that the examiner’s view of whether Tidyman has a cavity formed the basis for the Court’s construction of the cavity limitation because, as noted, Little Giant did not rely on this portion of the file history in its claim-construction briefing. The Claim Construction Order noted that both parties had agreed the cavity limitation should be construed to include the phrase “not passing all the way through,” and it is true that language was drawn from statements made in the Notice of Allowance. But the Notice of Allowance did not, in any way, refer to Tidyman.

from a cavity in its Claim Construction Order, would fall within the scope of the claim. It also runs afoul of the Court’s further discussion of the cavity limitation in this Order, where the Court has even more explicitly stated that the claimed cavity does not include hollowed-out spaces that are unbounded on both ends. In addition, Mr. Smith’s analysis differs from the Court’s assessment that the “disposed within” language invokes a structure having an open space that at least partially surrounds or encloses the bracket that is placed inside it. His taco shell example, Smith Report at 18, does not account for that reality. Consequently, allowing Mr. Smith to testify concerning his infringement opinions would permit him to testify to an understanding of the cavity limitation that is at odds with the Court’s own construction. *Treehouse Avatar*, 54 F.4th at 715 (affirming district court’s decision to strike portions of an expert report based on a “on a claim construction that is materially different from the construction adopted by the . . . court” and citing cases); *CellTrust Corp.*, 625 F. Supp. at 855 (excluding expert’s noninfringement opinions because they were “contrary to the Court’s claim construction” and, therefore, were not relevant).

For these reasons, the Court excludes Mr. Smith’s testimony to the extent he opines that the Speed Locks literally contain the cavity limitation because he failed to apply the Court’s construction.

IV. Infringement of the Cavity Limitation

A. Literal Infringement

Both parties seek summary judgment on the issue of literal infringement of the cavity limitation. In assessing literal infringement, the “properly construed claims are

compared to the allegedly infringing device” and the Court asks whether, taking the evidence in the light most favorable to the non-moving party, there is sufficient evidence to allow a reasonable jury to find in that party’s favor. Having viewed the evidence through this lens, and in light of its decision not to adopt Little Giant’s latest proposed claim construction, the Court finds that no reasonable jury could find the Speed Locks on the Accused Ladders literally infringe the cavity limitation.

Tricam admits that there are five hollowed-out spaces on the underside of the Speed Lock handles.¹³ Among these is the deepest central, cylindrical hollow that receives the boss of the ramp-and-boss structure. In addition, there are four smaller hollows, which Mr. Ver Halen explained were removed for manufacturing purposes. It is undisputed that these five hollowed-out spaces in the Tricam handle do not pass all the way through. It is also undisputed that no portion of the Tricam bracket sits within the four smaller hollows. Tricam admits that approximately 20% of the volume of the ramp-and-boss structure—essentially all of the boss itself—is placed inside of the central, cylindrical hollow. Ver Halen Rebuttal ¶¶ 78, 93. But no reasonable jury could find that 20% is “more than a majority of the first bracket.” Absent some other hollowed-out space in the Tricam handle that does not pass all the way through yet does have substantially more of the bracket placed inside of it, the evidence does not show that the Accused Ladders have the cavity limitation.

¹³ Tricam concedes that each of these hollowed-out spaces is a cavity. Def.’s Summ. J. Br. at 14.

Of course, Little Giant argues that the cavity limitation is satisfied by the full space between the two wings of the Tricam handle, not just by the five smaller cavities acknowledged by Tricam. It asserts that the evidence shows a hollowed-out space between those wings. Further, Little Giant notes that the portion of the ramp-and-boss structure that sits between the wings of the Tricam handle, when combined with the boss that inserts into the handle's central, cylindrical hollow, constitutes more than a majority of the first bracket placed inside of a hollowed-out space. Finally, Little Giant argues that the hollowed-out space does not pass all the way through because, in at least some directions, the space between the wings does not pass all the way through, though it does pass all the way through in others.

In opposing Tricam's motion for summary judgment (and in support of its own) Little Giant relies on the opinions of Smith. Smith used 3D scans of the Accused Ladders' locking mechanisms to determine that, in terms of both the percentages of surface area and volume of the Tricam bracket, more than 50% of the ramp-and-boss is inside the central recess that receives the boss and the open space between the wings. Smith Report at 17–18 & Ex. 5. Although Tricam disagrees that the space between the wings constitutes a cavity within the meaning of the '416 patent, it does not dispute Smith's assessment of the amount of the bracket that is within spaces Little Giant defines as cavities. Indeed, Little Giant points to testimony in Ver Halen's deposition in which he acknowledges that portions of the ramp are inside the space between the wings. Ver Halen Dep. 32–33 (Doc. 180-3); *see id.* at 34–35 (acknowledging that Ver Halen did not perform contradictory measurements). So, the question of infringement boils down to

whether that space between the wings of Tricam’s Speed Lock handle is properly considered a cavity within the meaning of the Court’s construction.

Smith reaches the conclusion that the space between the wings is a cavity because, even though it passes all the way through in at least one direction (parallel to the rails when the handle is in the first, *i.e.* locked, position) it “does not go all the way through in every other direction, literally satisfying the Court’s claim construction.” Smith Reply ¶ 29 (underlining in original). But the Court has already found that Smith fails to properly apply its construction, and the Court has rejected Little Giant’s request to revise—either expressly or implicitly—that construction.

Aside from Smith’s disregarded opinion about the space between the wings of the Tricam handle constituting a cavity, Little Giant identifies no other evidence that could allow a reasonable jury to conclude that the Tricam handle literally practices the following claim limitation: “when the first component is in the first rotational position, more than a majority of the first bracket is placed inside of a hollowed out space (not passing all the way through) defined by the first component.” Therefore, with respect to literal infringement of the cavity limitation, Little Giant’s motion for summary judgment is denied and Tricam’s motion for summary judgment is granted.

B. Doctrine of Equivalents

Both parties also seek summary judgment on the issue of infringement of the cavity limitation under the doctrine of equivalents. According to Little Giant, even if the Court’s construction excludes spaces that are unbounded on both ends, there is no genuine dispute of material fact that the space between the wings is essentially the same

as the claimed cavity. Little Giant asserts that the wing space in the Speed Lock handle “performs the same function as the claimed cavity by encompassing more than a majority of the bracket when in the first rotational position, and does this in substantially the same way to achieve substantially the same result.” Pl.’s Infringement Mem. at 9–10.

Tricam argues that Little Giant is prohibited from relying on the doctrine of equivalents for the cavity limitation due to prosecution history estoppel. According to Tricam, because Little Giant amended the cavity limitation in response to the examiner’s rejection based on the Grebinoski prior art, Little Giant surrendered claim scope that cannot now be recaptured through application of the doctrine of equivalents. Tricam argues that Little Giant has failed to overcome the presumption that estoppel applies under *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. Ltd.*, 535 U.S. 722, 740 (2002) (*Festo I*) and *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. Ltd.*, 344 F.3d 1359, 1367 (Fed. Cir. 2003) (*Festo II*).

1. Estoppel and the *Festo* Presumption

As discussed above, the doctrine of equivalents allows a patentee to “lay claim to ‘those insubstantial alterations that were not captured in drafting the original patent claim but which could be created through trivial changes.’” *Conoco, Inc. v. Energy & Env’t Int’l, L.C.*, 460 F.3d 1349, 1363 (Fed. Cir. 2006) (quoting *Festo I*, 536 U.S. at 733). Under the rule of prosecution history estoppel, however, a patentee cannot use the doctrine of equivalents “‘to recapture subject matter surrendered from the literal scope of a claim during prosecution.’” *Pharma Tech Sols., Inc. v. LifeScan, Inc.*, 942 F.3d 1372, 1380 (Fed. Cir. 2019) (quoting *Trading Techs. Int’l, Inc. v. Open E Cry, LLC*, 778 F.3d

1309, 1322 (Fed. Cir. 2013)). “Prosecution history estoppel can occur in two ways: ‘either (1) by making a narrowing amendment to the claim (‘amendment-based estoppel’) or (2) by surrendering claim scope through argument to the patent examiner (‘argument-based estoppel’).” *Id.* (quoting *Conoco*, 460 F.3d at 1363). This case implicates the first scenario, that of amendment-based estoppel.

When dealing with amendment-based estoppel, courts may presume that the “‘patentee’s decision to narrow . . . through amendment [acts as] a general disclaimer of the territory between the original claim and the amended claim.’” *Id.* (quoting *Festo I*, 535 U.S. at 740).¹⁴ The presumption is rebuttable, however, if the patentee shows that the amendment fits within one of three exceptions. *Pharma Tech*, 942 F.3d at 1380. These exceptions require the patentee to show

(1) the equivalent was “unforeseeable at the time of the application”; (2) “the rationale underlying the amendment may bear no more than a tangential relation to the equivalent in question”; or (3) “there may be some other reason suggesting that the patentee could not reasonably be expected to have de-scribed the insubstantial substitute in question.”

¹⁴ No such presumption arises when the patentee narrows claims through argument, and argument-based estoppel will prevent a patentee’s reliance on the doctrine of equivalents only where “‘the prosecution history . . . evince[s] a clear and unmistakable surrender of subject matter.’” *Conoco*, 460 F.3d at 1364 (quoting *Deering Precision Instruments, LLC v. Vector Distrib. Sys., Inc.*, 347 F.3d 1314, 1326 (Fed. Cir. 2003)). This case does not implicate argument-based estoppel.

Id. (quoting *Festo I*, 535 U.S. at 740–41). The focus in this case is on the second of these exceptions.¹⁵

For a patentee to rely on the second exception, the patentee must show that “the reason for the narrowing amendment was peripheral, or not directly relevant, to the alleged equivalent.” *Festo II*, 344 F.3d at 1369. “[A]n amendment made to avoid prior art that contains the equivalent in question is not tangential; it is central to allowance of the claim.” *Id.* Courts asking whether the amendment is “tangential” to the particular equivalent at issue “focus on the patentee’s objectively apparent reason for the narrowing amendment” and “that reason should be discernible from the prosecution history record” to fulfill the purpose of notifying the public of the scope of the claimed invention. *Id.* at 1369–70. The court should reach this conclusion on the “prosecution history record without the introduction of additional evidence, except when necessary, testimony from those skilled in the art as to the interpretation of that record.” *Id.* at 1370. “The tangential relation exception is ‘very narrow.’” *Integrated Tech. Corp. v. Rudolph Techs., Inc.*, 734 F.3d 1352, 1358 (Fed. Cir. 2013) (quoting *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 480 F.3d 1335, 1342 (Fed. Cir. 2007)).

¹⁵ Under the first exception, amendment-based estoppel will not bar application of the doctrine of equivalents if the patentee can show that the particular equivalent alleged to infringe “would have been unforeseeable to one of ordinary skill in the art at the time of the amendment.” *Festo II*, 344 F.3d at 1369. This showing depends on the underlying facts, including expert testimony or other extrinsic evidence. *Id.* The third exception is “narrow,” and “may be satisfied when there was some reason, such as the shortcomings of language, why the patentee was prevented from describing the alleged equivalent when it narrowed the claim.” *Id.* In determining whether the patentee has shown that this exception applies, the focus “should also be limited to the prosecution history record.” *Id.* Little Giant does not invoke either of these exceptions, focusing solely on whether the amendment is tangential to the alleged equivalent at issue here.

2. Analysis

Little Giant seems to raise two distinct challenges to the application of amendment-based estoppel here. First, it argues that the amendments at issue did not surrender the territory into which the equivalent at issue falls at all. Second, Little Giant invokes the second exception to amendment-based estoppel, claiming that the portions of the subject matter surrendered here were tangential to the equivalent implicated by the Speed Lock.¹⁶ The Court disagrees on both counts and finds that prosecution-history estoppel applies.

(a) The Grebinoski Amendments

When Little Giant originally submitted its claims to the PTO, on October 6, 2017, the relevant language claimed: “when the first component is in the first rotational position, the engagement pin extends through a pair of aligned openings, including a first opening in the first rail and a second opening formed in the third rail. . . .” Armstrong Decl., Ex. 7, 10/6/17 Application at 16. The examiner rejected this aspect of Claim 1 because Grebinoski already teaches an engagement extending through aligned openings in the rails when the first component of the locking mechanism is in the first rotational

¹⁶ Whether Little Giant, in fact, raises these as two separate arguments is not entirely clear from its briefing. Little Giant argues that “[i]t is clear from the prosecution history that the amendment adding ‘cavity’ to the claims did *not* surrender territory encompassing the Speed Lock.” Pl.’s SJ Opp’n at 5; *id.* at 5–7. Then, without raising any real distinction between that argument and the next, Little Giant asserts that “[t]he ‘tangential rebuttal to the *Festo* presumption of estoppel applies in exactly these circumstances.” *Id.* at 8. In other words, Little Giant’s discussion of this issue collapses the question of the scope of claim territory surrendered with the question of whether the purpose of the amendment was tangential to the equivalent at issue. But in candor, much of the relevant caselaw does the same thing. And in this case, the analysis of whether the amendment surrendered the equivalent is very similar to the question of whether the rationale behind that amendment is tangential to the equivalent.

position. *Id.*, Ex. 8, 12/21/17 Office Action. On June 20, 2018, Little Giant amended the claim language to read: “when the first component is in the first rotational position, a substantial portion of the first bracket is concealed between the first rail and the first component and the first engagement pin extends through a pair of aligned openings.” *Id.*, Ex. 9, 6/20/18 Response at 2.

The examiner again rejected the claim as anticipated by Grebinoski. The examiner explained that the newly added phrase “substantial portion of the first bracket” could be interpreted in numerous ways, including: that the “substantial portion” could be considered “important”; it could be any portion “which has substance”; or it could be “a considerable amount.” *Id.*, Ex. 10, 9/10/18 Office Action at 12. The examiner also suggested that other meanings not specifically articulated were contemplated. *Id.* The examiner further stated:

Note that the claims as currently recited do not require an entirety of the first bracket to be substantially concealed when the first component is in the first rotational position which seems to be what the applicant may be intending to encompass in scope, but does not provide the claim with the language to encompass the scope to require it [sic] be limited so that an entirety of the first bracket is substantially concealed when the first component is in the first rotational position.

Id. at 13.

On March 8, 2019, Little Giant amended the claim language again, reciting: “when the first component is in the first rotational position a substantial ~~portion~~ amount of the first bracket is ~~concealed between the first rail and the first component~~ disposed within a cavity defined by the first component and the first engagement pin extends

through a pair of aligned openings. . . .” *Id.*, Ex. 11, 3/8/19 Response at 2 (underlining and strikethroughs in original). Little Giant stated that it disagreed with the examiner’s rejection. However, it further described the amendment of the claim language:

In an effort to further prosecution, [Little Giant] has amended claim 1 to recite that when the first component is in the first rotational position, a substantial amount of the first bracket is disposed within a cavity defined by the first component. Such subject matter is clearly disclosed by the as-filed application (see, e.g., FIGS. 12-14) and Grebinoski does not disclose any portion of the bracket ever being within a cavity of the lever.

Id. at 9.

(b) Scope of the Territory Surrendered

Little Giant argues that this prosecution history shows that it never surrendered any claim scope where the bracket is inside the handle of the first component. Little Giant contends that “the scope of the original ‘concealed between’ version of the claim encompassed designs that could conceal part of the bracket both inside and outside the handle space.” Pl.’s SJ Opp’n at 7. Because Grebinoski only dealt with concealed portions of the bracket falling outside the handle, Little Giant argues that its narrowing amendment, made to avoid Grebinoski, did not surrender any designs where concealed portions of the bracket fall inside the handle. *Id.* Instead, Little Giant essentially argues that it gave up only the scope necessary to avoid the specific category of designs that would be encompassed by Grebinoski.

The Court disagrees. Contrary to Little Giant’s position, it has not shown that the only territory it surrendered was a design where the bracket is concealed outside handle space. The territory between designs where the bracket is concealed between the handle

and the rails and where it is disposed within a cavity of the handle is broad, and it includes not only designs where that concealment occurs outside any handle space, but also designs where the bracket is inside handle space that doesn't constitute a cavity.

Little Giant's original claim was expansive, and included all designs where a substantial portion of the bracket was concealed between the first component and the rail. The patent examiner rejected that claim because Grebinoski already taught a bracket that was concealed between the rail and the first component. In response, Little Giant amended its claim using narrower language and abandoning designs where the first component is merely concealed between the handle and the rails. But in doing so, Little Giant affirmatively chose to claim only those designs where a majority of the bracket was placed inside of a cavity defined by the first component. It introduced not only the placement inside of space in the handle, but through its reference to the first bracket being "disposed within a cavity," it limited its claim to designs where the bracket was at least partially encapsulated or surrounded. It did not, as it now argues, hang on to equivalents where the bracket's concealment occurs inside open handle space that passes

all the way through.¹⁷ In other words, Little Giant could have offered claim language that fell between the broad concealment it started with and what it ultimately chose, but instead it amended its claim language to encompass a far narrower scope than it now attempts to assert through the doctrine of equivalents. *See Norian Corp. v. Stryker Corp.*, 432 F.3d 1356, 1361–62 (Fed. Cir. 2005) (“[I]t frequently happens that patentees surrender more through amendment than may have been absolutely necessary to avoid particular prior art. In such cases, we have held the patentees to the scope of what they ultimately claim, and we have not allowed them to assert that claims should be interpreted as if they had surrendered only what they had to.”); *see also Ely Lilly & Co. v. Hospira, Inc.*, 933 F.3d 1320, 1332 (Fed. Cir. 2019) (“Amendments are not construed to cede only that which is necessary to overcome the prior art.”). Having chosen to narrow its claims by use of this language, Little Giant cannot recapture claim scope through the doctrine of equivalents where the majority of the bracket is concealed between the handle

¹⁷ In light of this broader surrender of claim scope, the Court is unpersuaded by Little Giant’s reliance on *Primos, Inc. v. Hunter’s Specialties, Inc.*, 451 F.3d 841 (Fed. Cir. 2006). In *Primos* the invention at issue was an animal call that employed a plate “differentially spaced” above a membrane, which emitted an animal sound when a hunter blew into the device. *Id.* at 843–44. During prosecution, the patentee added the “differentially spaced” limitation to avoid prior art that “consisted of a shelf-like structure positioned on top of the membrane without any spacing.” *Id.* at 849. The defendant’s accused device used a dome structure that the patentee argued infringed the patent under the doctrine of equivalents because the dome was spaced above the membrane. *Id.* The *Primos* court held that the narrowing amendment surrendered only “plates that are not differentially spaced above the membrane” and the ceded territory was only tangentially related “to the contested element in the accused device.” *Id.* Thus, in *Primos*, the patentee only surrendered the plates that were attached to the membrane, so even though its amendment narrowed its original claims, it retained claims for plates differentially spaced above the membrane—though the dome in the accused device was not a plate, it was an equivalent that was tangential to the reason for the amendment. In contrast, because Little Giant gave up both more and more relevant territory in its March 2019 amendment, allowing Little Giant to assert that Tricam’s handles infringe through the doctrine of equivalents would permit it to regain claim scope that was surrendered to avoid prior art.

and the rail simply because that concealment occurs by placing substantial portions of the bracket inside a space that is *not* a cavity.

(c) Tangential-Relation Exception

Little Giant invokes an exception to the *Festo* presumption, arguing that even if the equivalent at issue falls within the surrendered territory, it was so tangential to the amendment that estoppel doesn't apply. Again the Court disagrees. Here, the difference between concealment (or something being hidden between the handle and the rail) and being disposed within a cavity, was at the heart of the amendments to avoid Grebinoski. And the cases relied on by Little Giant are readily distinguishable on this point. For instance, in *Insituform Technologies, Inc. v. CAT Contracting, Inc.*, the patentee amended its claims to avoid a prior-art reference that taught a single vacuum source placed far away from a resin source. 385 F.3d 1360, 1368 (Fed. Cir. 2004). The amended claim language applied to a single vacuum source *near* the resin source. The alleged equivalent used multiple vacuum sources, and the Federal Circuit found that tangential-relation exception applied because the purpose for the amendment was to avoid the prior art regarding placement of the vacuum source in relation to the resin source, *not* to specify how many vacuum sources would be employed. *Id.* at 1368–70. Here the situation is otherwise. The reason for the March 8, 2019 amendment—avoiding a prior art locking mechanism that conceals the bracket between the handle and the rail—directly relates to

the accused equivalent, Tricam's locking mechanism that also conceals the bracket between the handle and the rail.¹⁸

For these reasons, the Court finds that Little Giant may not rely on the doctrine of equivalents to assert infringement of the cavity limitation and Tricam is entitled to summary judgment on this issue.

V. The Remaining Summary Judgment Issues

In Little Giant's motion, it seeks a determination that it is entitled to summary judgment on the issues of infringement and on Tricam's invalidity defenses. Little Giant argues that based on the undisputed evidence, the Accused Ladders satisfy the "bracket," "first component," "cavity," and "retaining mechanism" limitations in the '416 patent as a matter of law. Pl.'s Infringement Mem., *passim*. Little Giant also argues that Tricam's invalidity defenses fail as a matter of law because the '416 patent is not anticipated by any prior art reference, the patent's claims are not obvious in light of prior art, and Tricam cannot show by clear and convincing evidence that the patent's claims are invalid for lack of a written description, indefiniteness, or lack of enablement. Pl.'s Mem. in Supp. of Summ. J. on Invalidity (Doc. 178). In addition to seeking summary judgment on the issue of non-infringement of the cavity limitation, Tricam also argues that it is

¹⁸ The Court is also not persuaded by Little Giant's reliance on *Ajinomoto Co. v. International Trade Commission*, 932 F.3d 1342, 1355 (Fed. Cir. 2019). There the court found the tangential-relation exception applied because the rationale for the patentee's amendment, which narrowed claimed DNA sequences to avoid a particular prior art protein, was unrelated to the asserted equivalent which selected from codon-randomized sequences that corresponded to a different protein. *Id.* Beyond a broad statement of the tangential-relation exception rule, Little Giant does not explain how the decision in *Ajinomoto* informs the analysis in this case.

entitled to summary judgment because the Accused Products do not infringe the “first component” limitation and because the ’416 patent is invalid as anticipated by prior art. Def.’s SJ Mem. at 18–27.

Because the Court has found that no reasonable jury could conclude that Tricam’s Accused Ladders infringe the cavity limitation of the ’416 patent, it is unnecessary for the Court to reach these remaining issues. Accordingly, to the extent they raise issues beyond the infringement of the cavity limitation, the Court denies the parties’ cross-motions for summary judgment as moot and declines to address their merits.

VI. Order

For the reasons discussed above, **IT IS HEREBY ORDERED THAT:**

1. Plaintiff’s Motion for Summary Judgment (Doc. 164) is **DENIED**. The Court denies Plaintiff’s motion on the merits to the extent Plaintiff argues that it is entitled to judgment as a matter of law on the issues of whether the Accused Ladders infringe the cavity limitation in the ’416 patent literally or under the doctrine of equivalents. In all other respects, the Court finds Plaintiff’s motion is moot.
2. Defendant’s Motion for Summary Judgment (Doc. 167) is **GRANTED** because no reasonable jury could conclude that the Accused Ladders literally infringe the cavity limitation in the ’416 patent and amendment-based estoppel precludes Plaintiff from relying on the doctrine of equivalents to prove infringement of this limitation. In all other respects, the Court finds Defendant’s motion is moot.
3. Defendant’s Motion to Exclude Expert Testimony of Fred Smith (Doc. 171) is **GRANTED IN PART**. The Court excludes Mr. Smith’s opinions concerning infringement of the cavity limitation because Mr. Smith failed to apply the Court’s claim construction. In all other respects, the Court finds Defendant’s motion is moot.
4. This action is **DISMISSED WITH PREJUDICE**.

Let Judgment be entered accordingly.

Date: March 28, 2024

s/Katherine Menendez

Katherine Menendez
United States District Judge